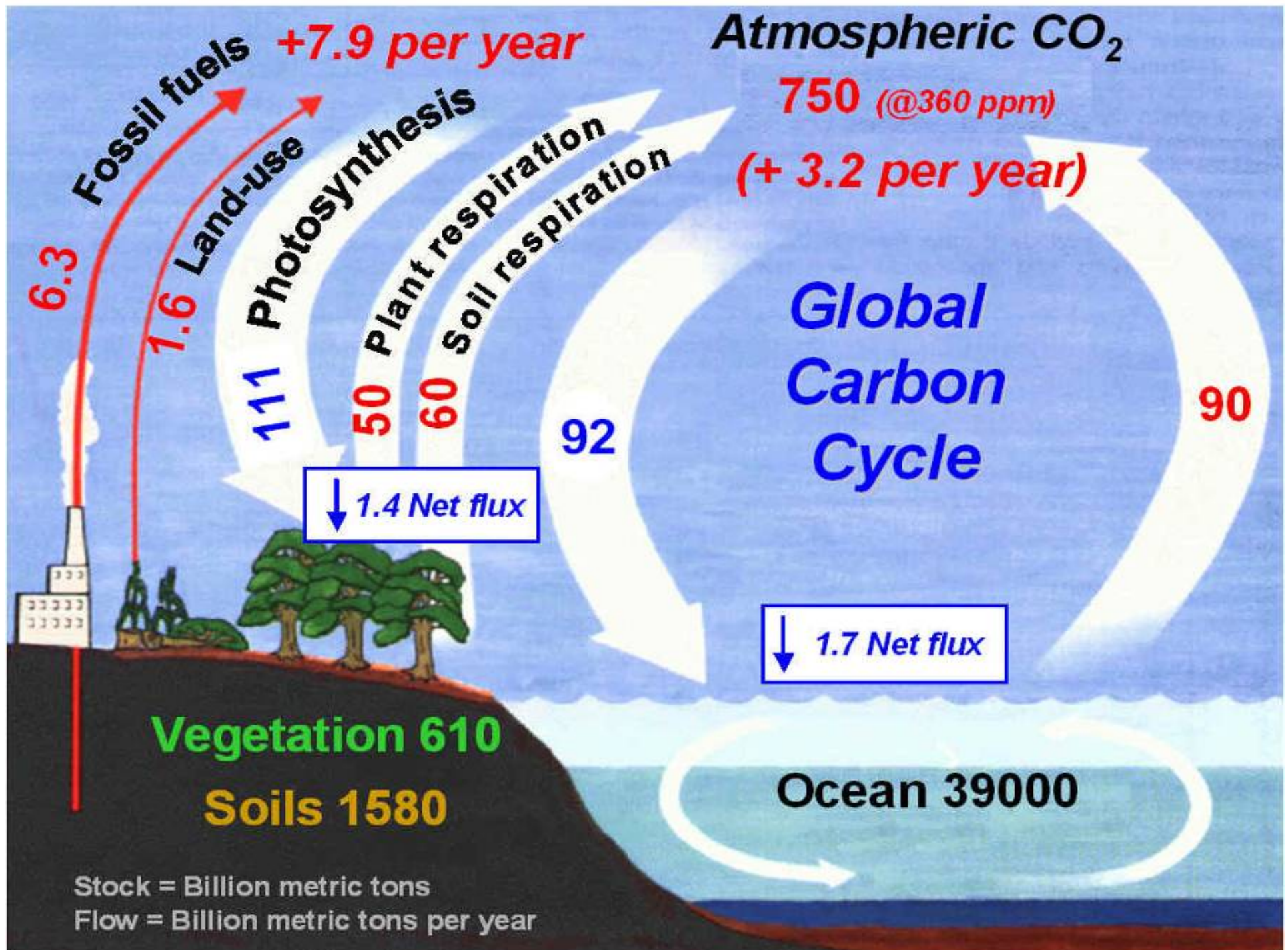


The Role of Nature in Capturing and Storing Carbon Emissions

Bill Stanley for
Virginia Governor's Commission on Climate Change, March 2008



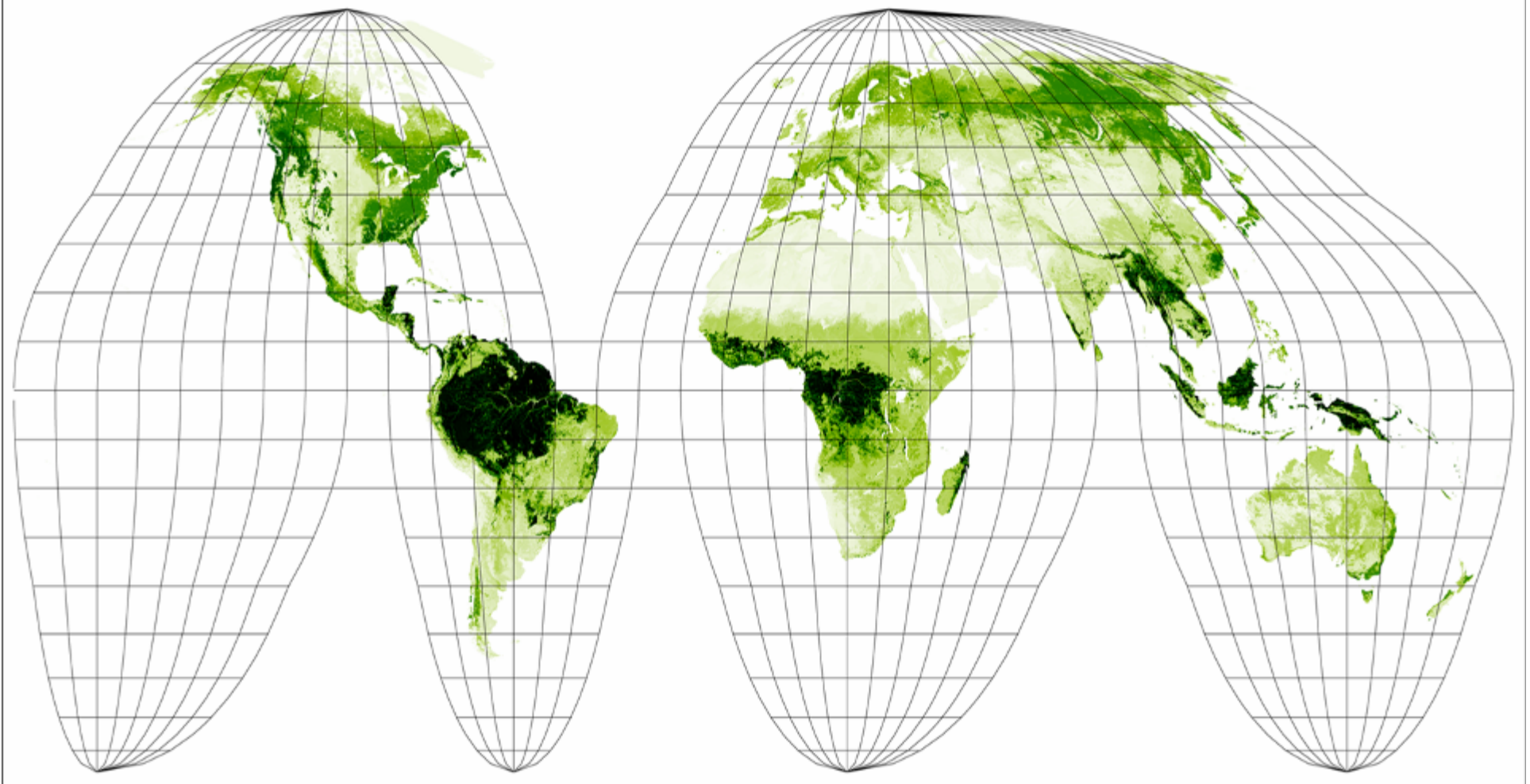
Photo credits, Erika Nortemann, Ellen Morris Bishop and Mark Godfrey





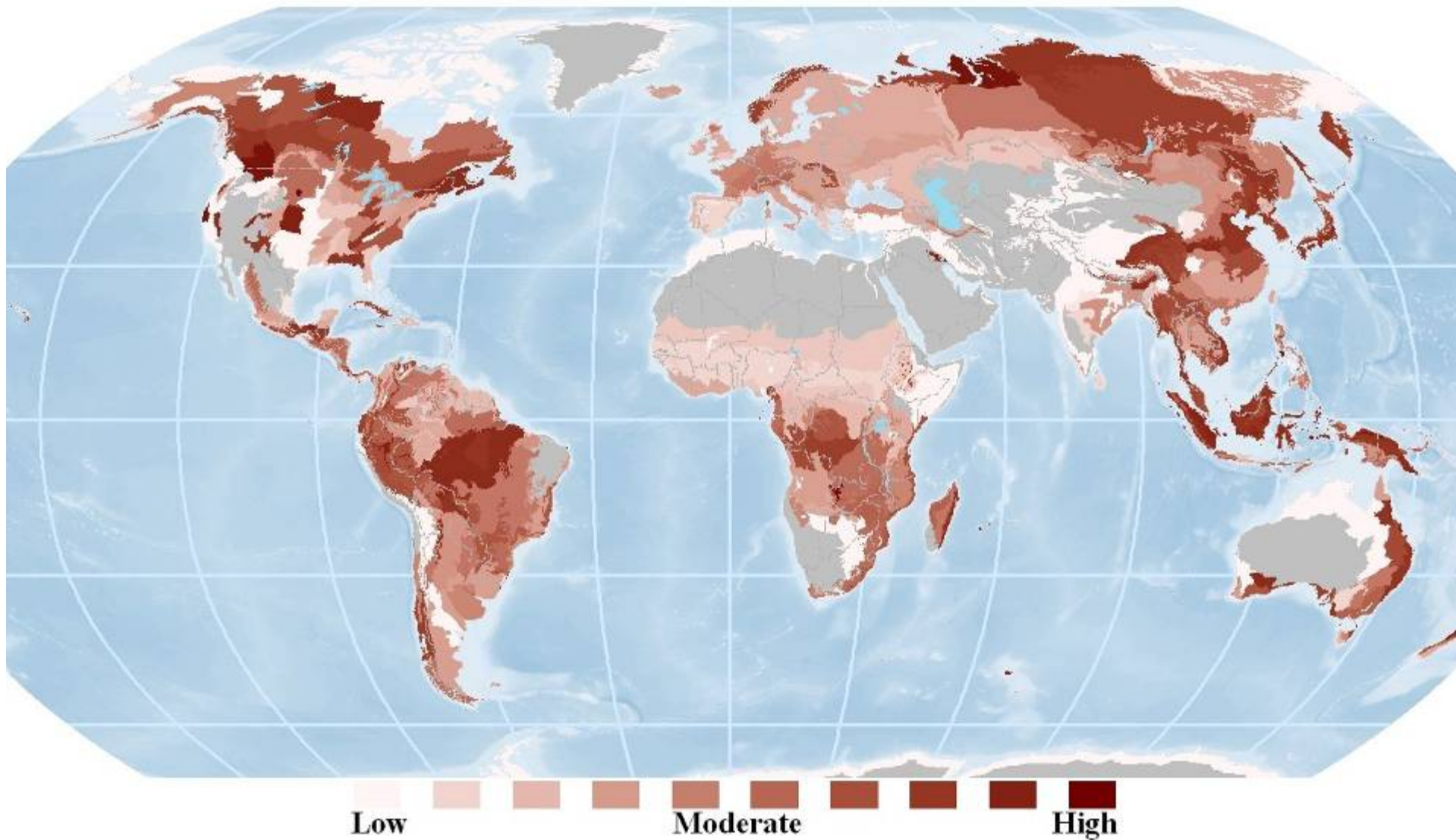
Carbon in Above- and Belowground Vegetation

(data USGS, U.S. Dept. Energy; analysis WRI)



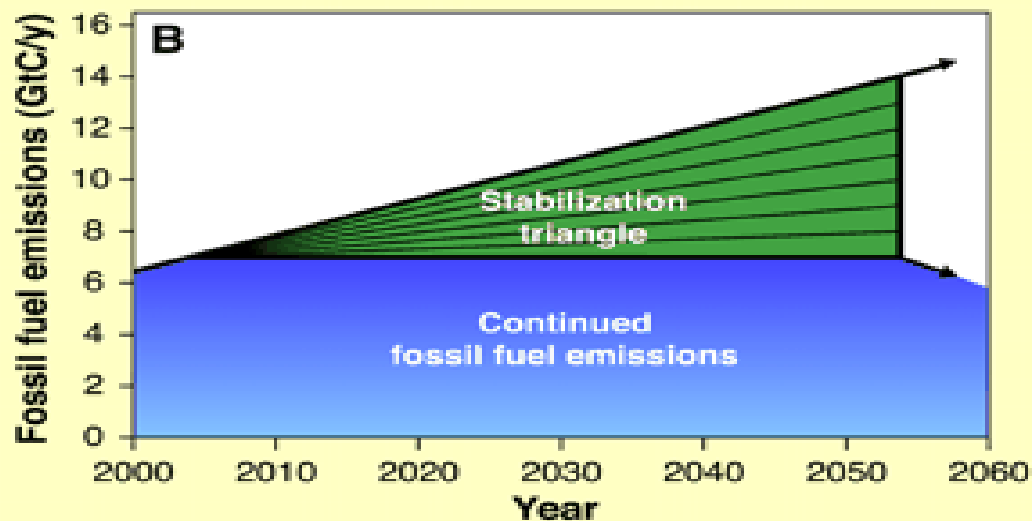
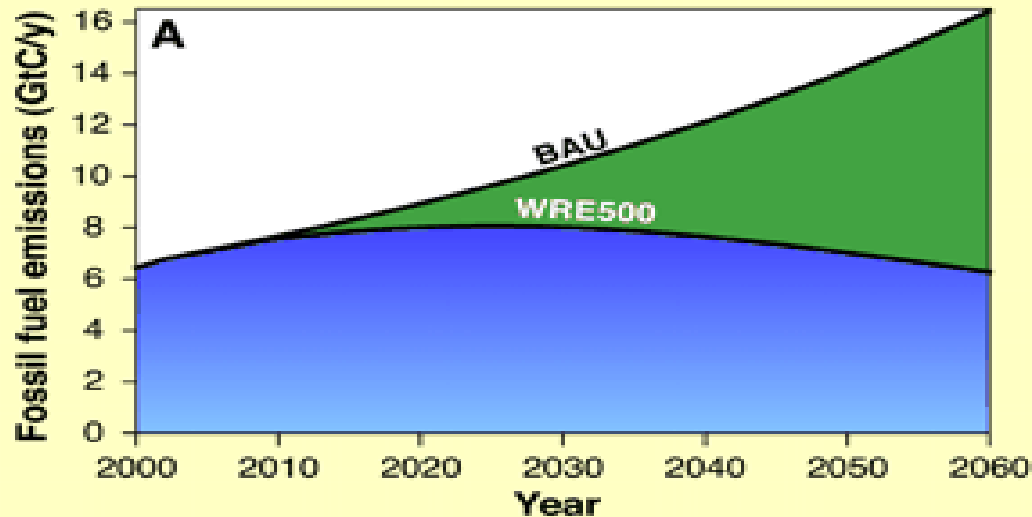


Deforestation Rate: 1990 - 2000





Solutions



To Stabilize GHG concentrations and keep temperature increase below 3C

We will need many 'solutions'

No silver bullet



No Silver Bullet

Pick seven by 2050

- Stop global deforestation and double reforestation
- Double vehicle fuel economy
- Double coal power efficiency
- Increase wind power by 50 times
- Increase global ethanol production by 50 times
- Increase solar power by 700 times
- Cut vehicle use in half
- Capture carbon from 3/4ths of current coal plant capacity
- Cut emissions from buildings and appliances by a quarter
- Double current nuclear capacity
- Replace current coal power capacity with natural gas
- Adopt 'conservation tillage' for all agriculture



No Silver Bullet

Pick seven by 2050

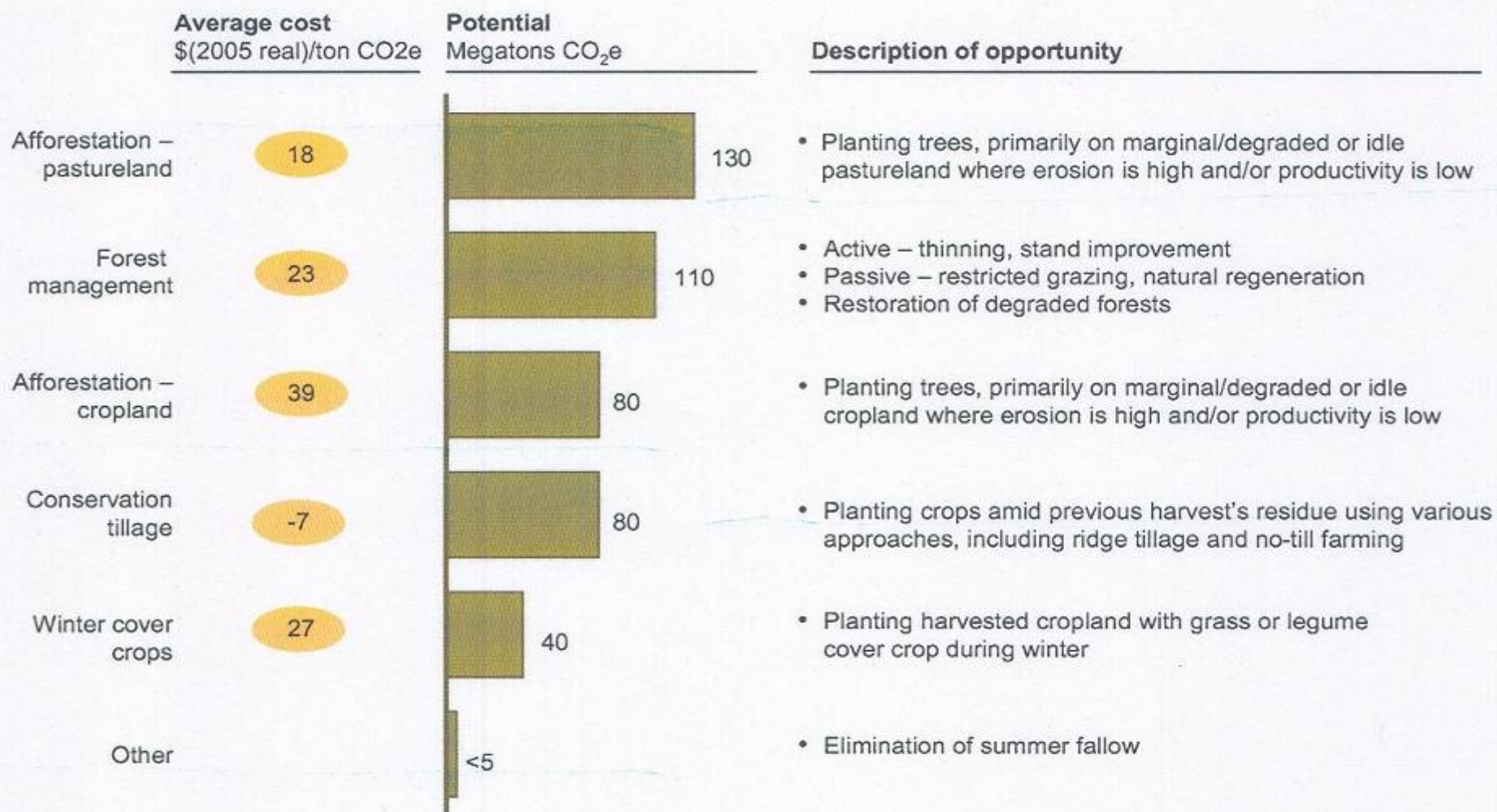
- **Stop global deforestation and double reforestation**
- Double vehicle fuel economy
- Double coal power efficiency
- Increase wind power by 50 times
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- Cut vehicle use in half
- Capture carbon from 3/4ths of current coal plant capacity
- Cut emissions from buildings and appliances by a quarter
- Double current nuclear capacity
- Replace current coal power capacity with natural gas
- **Adopt 'conservation tillage' for all agriculture**



ABATEMENT OPTIONS – TERRESTRIAL CARBON SINKS

Options less than \$50/ton CO₂e

MID-RANGE
CASE – 2030



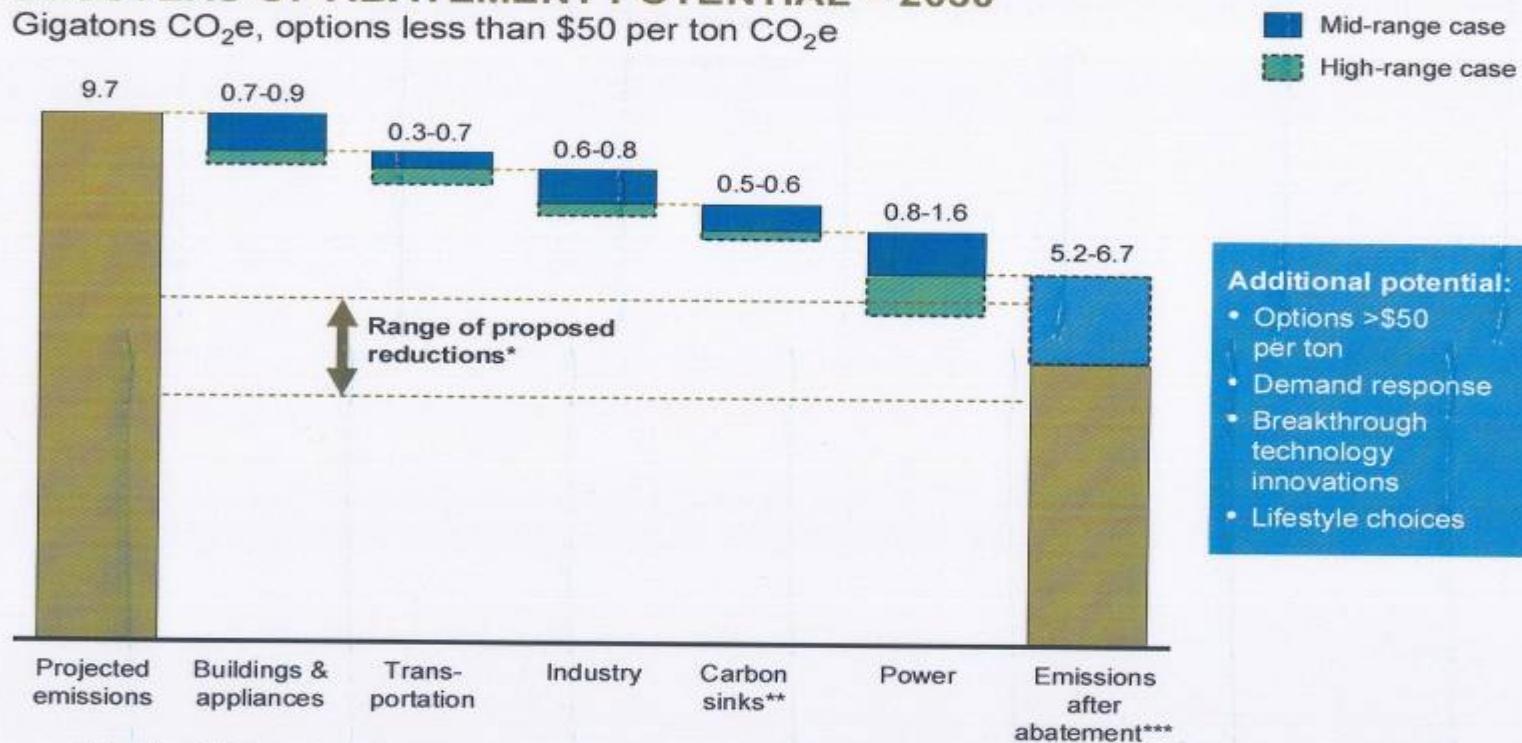
Source: McKinsey analysis



Exhibit 20

CLUSTERS OF ABATEMENT POTENTIAL – 2030

Gigatons CO₂e, options less than \$50 per ton CO₂e



* Based on bills introduced in Congress that address climate change and/or GHG emissions on an economy-wide basis and have quantifiable targets; targets calculated off the 2030 U.S. GHG emissions of 9.7 gigatons CO₂e/year (reference case)

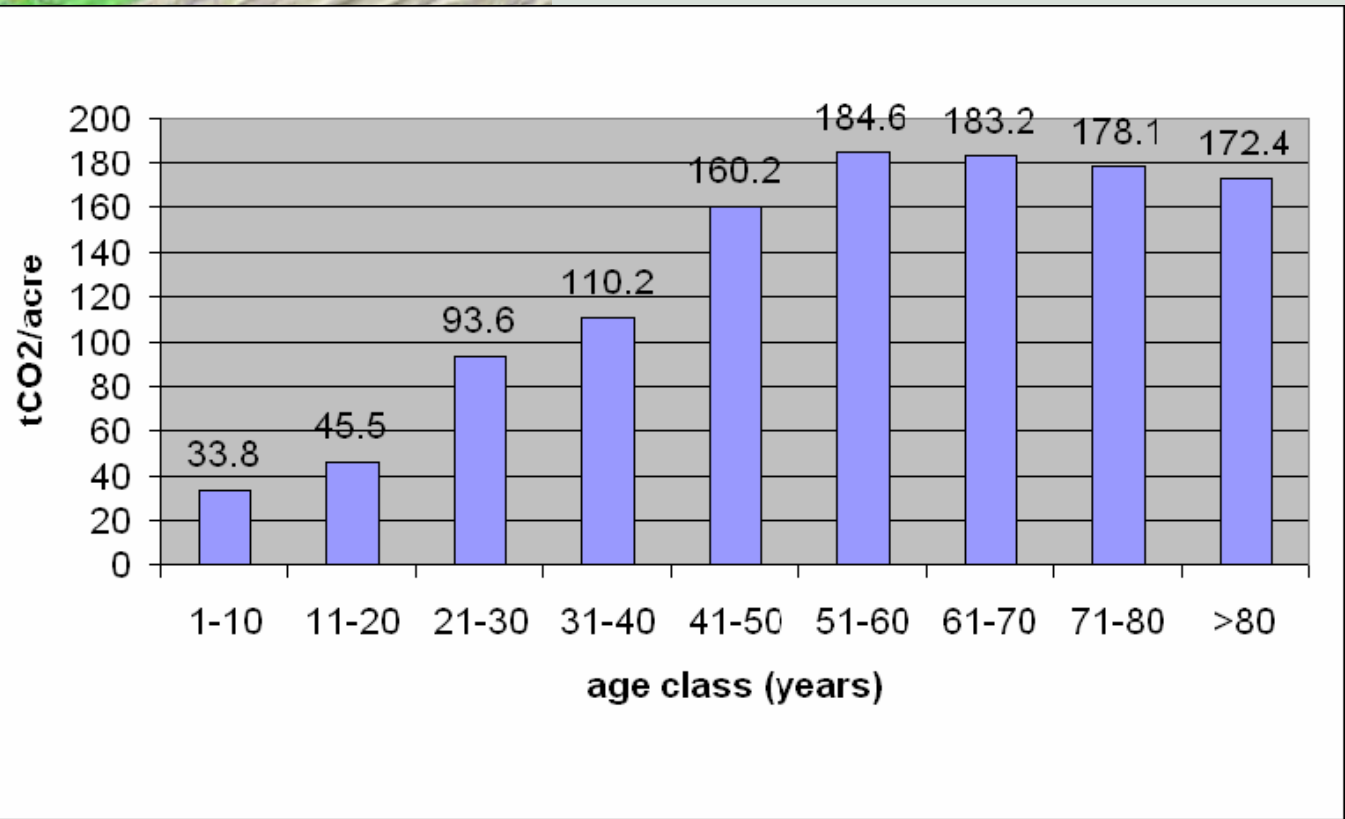
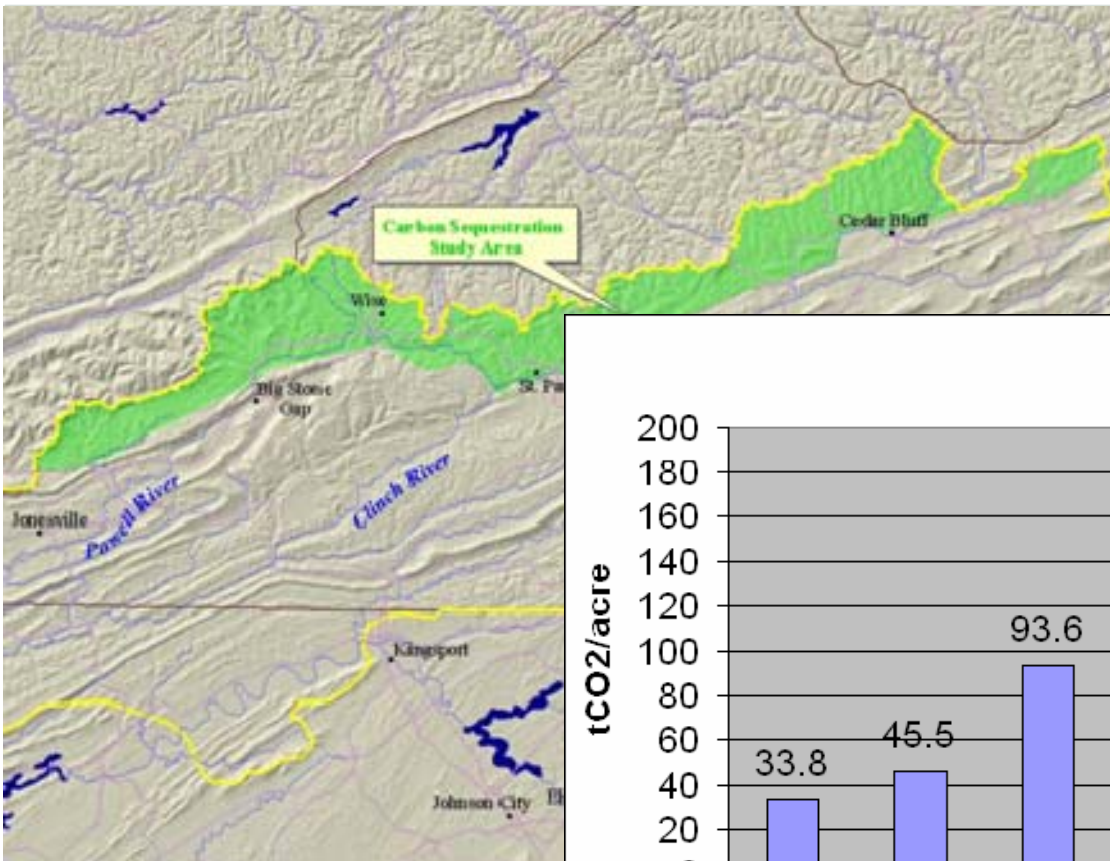
** Including abatement in the agriculture sector

*** Adjusted for cumulative rounding errors

Source: U.S. EIA; EPA; USDA; McKinsey analysis



Afforestation Options in Virginia: Clinch Valley

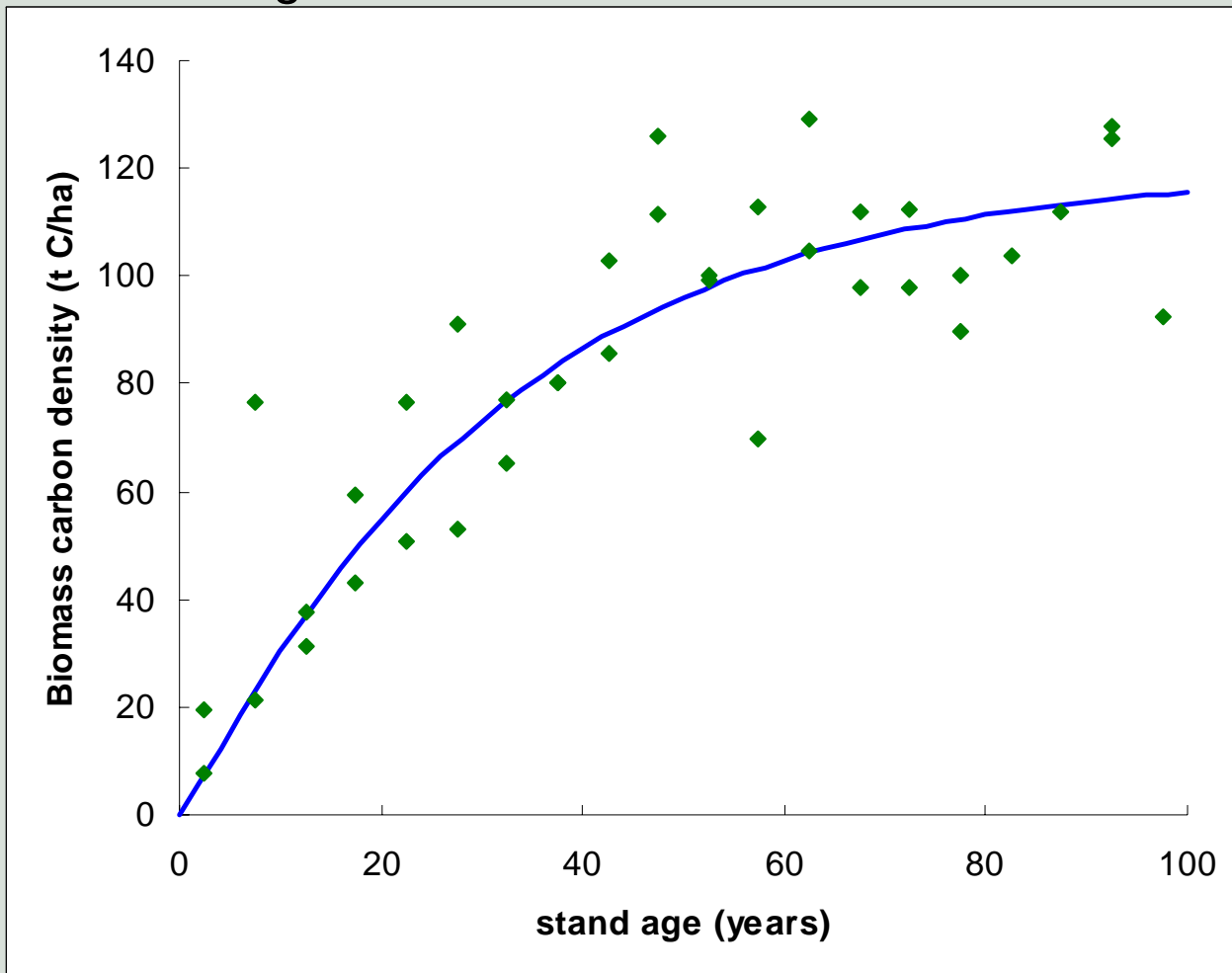




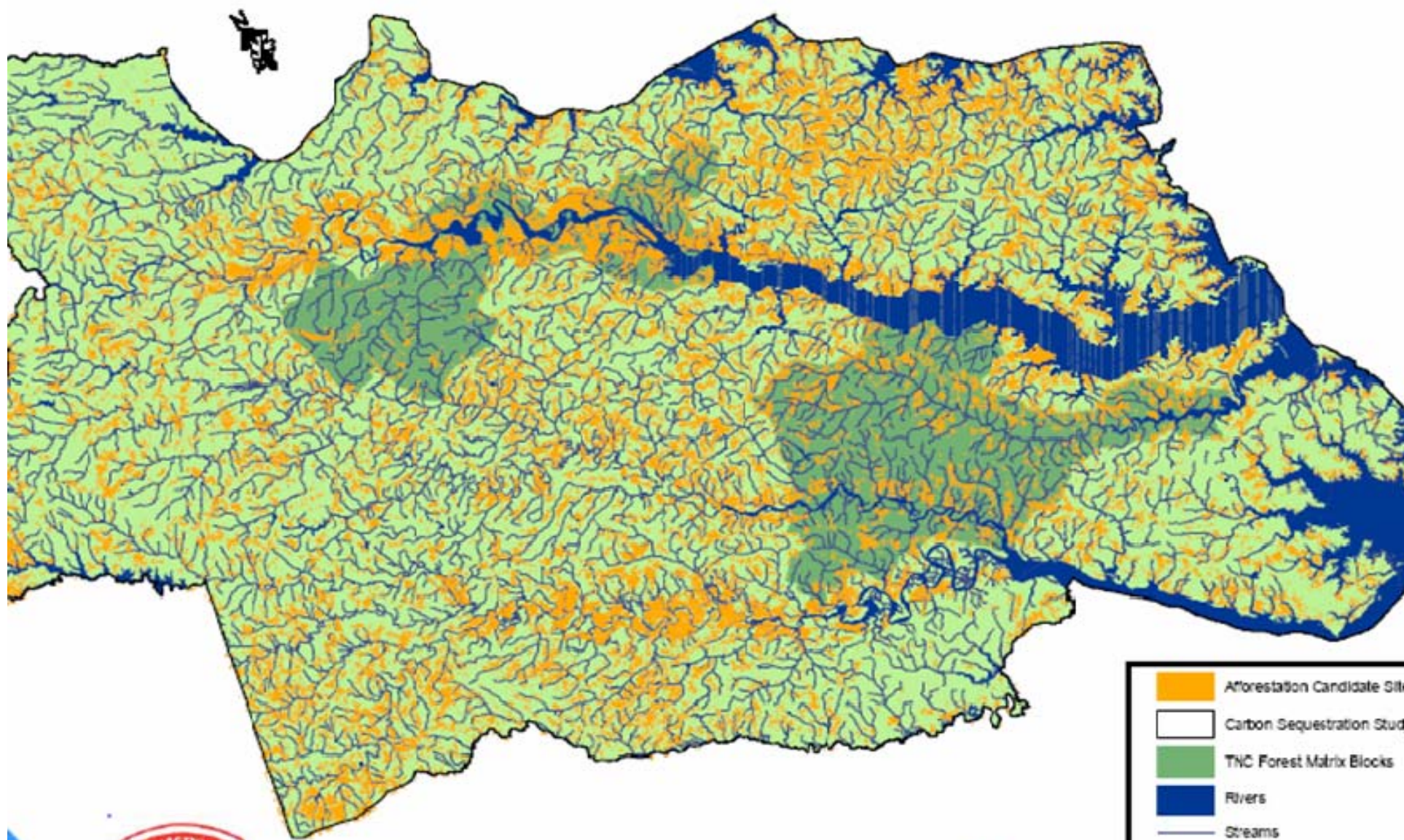


Afforestation Options in Virginia: Chesapeake Rivers

Aboveground carbon from afforestation



Mirant Chesapeake Rivers Carbon Sequestration Candidate Sites



The Nature Conservancy



SAVING THE LAST GREAT PLACES ON EARTH

